

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Mark Kopec Examiner #: 70819 Date: 8/16/06
 Art Unit: 1751 Phone Number 30: 27319 Serial Number: 10/786,489
 Mail Box and Bldg/Room Location: REM 9A-59 Results Format Preferred: (circle) PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: 2/25/04

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

SCIENTIFIC REFERENCE BR
 Sci & Tech Inf. Ctr.
 AUG 16 2006
 Pat. & T.M. Office

Please search for all polymers encompassed by
 claim ①. See Attached (Unit 1).

If "Unit 2" is found, please limit with "conductive" or
 "electroconductive" or
 "conductor".

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: _____	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: _____	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

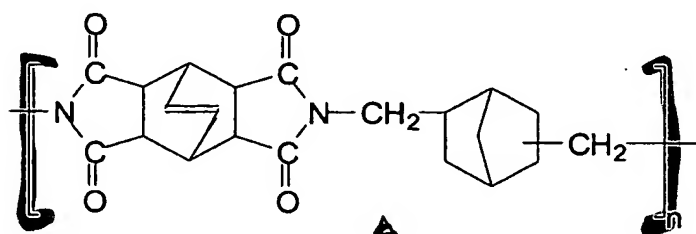
[10/786,489]

CLAIM(S)**What is claimed is:**

1. A conductor composition comprising an electrically
 5 conductive powder, an organic solvent soluble, polyimide resin and
 solvent wherein the ratio of conductive powder to organic resin is from
 80:20 to 99:1 and wherein polyimide resin comprises chemical units
 selected from:

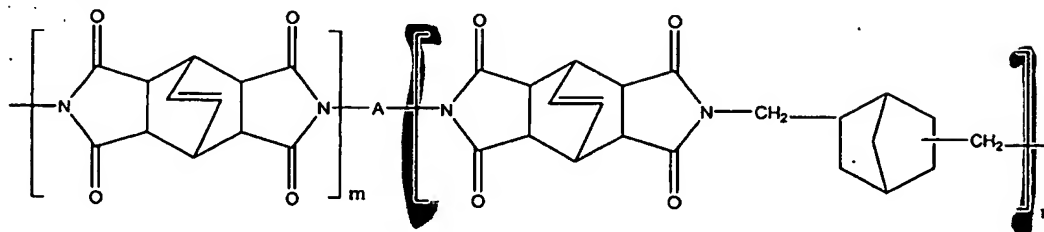
Unit (1)

10



and

Unit (2)



15

- and mixtures of these units and wherein in unit (2) the range of the mole
 ratio m to n is from 90 to 10 to 10 to 90 and "A" represents a diamine
 20 compounds which bond the structures chemically into polyimide units of
 the resin.

2. The conductor composition of claim 1, wherein "A" is selected
 25 from 2,2-bis[4-(amino phenoxy) phenyl] propane, diamino siloxane
 compounds and mixtures of these.

=> FILE REG

FILE 'REGISTRY' ENTERED AT 16:26:34 ON 18 AUG 2006
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
 COPYRIGHT (C) 2006 American Chemical Society (ACS)

=> D HIS

FILE 'LREGISTRY' ENTERED AT 16:13:48 ON 18 AUG 2006

L1 STR
 L2 STR

FILE 'REGISTRY' ENTERED AT 16:22:49 ON 18 AUG 2006

L3 SCR 2043
 L4 1 S L1 AND L2 AND L3
 L5 12 S L1 AND L2 AND L3 FUL
 SAV L5 KOP489/A
 L6 15 POLYLINK L5

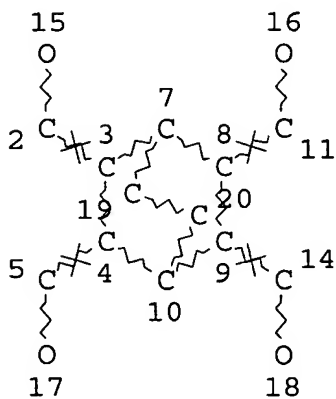
FILE 'ZCAPLUS' ENTERED AT 16:26:20 ON 18 AUG 2006

L7 5 S L6

FILE 'REGISTRY' ENTERED AT 16:26:34 ON 18 AUG 2006

=> D L5 QUE STAT

L1 STR

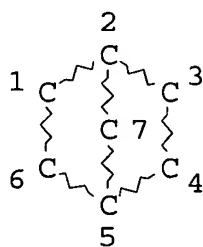


NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE
 L2 STR



Ak~N
 16 17

N~Ak
 12 11

NODE ATTRIBUTES:
 NSPEC 12 17 RC
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE
 L3 SCR 2043
 L5 12 SEA FILE=REGISTRY SSS FUL L1 AND L2 AND L3

100.0% PROCESSED 70317 ITERATIONS
 SEARCH TIME: 00.00.01

12 ANSWERS

=> FILE ZCAPLUS
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 COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

=> D L7 1-5 ALL HITSTR

L7 ANSWER 1 OF 5 ZCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2005:904371 ZCAPLUS
 DN 143:249087
 ED Entered STN: 26 Aug 2005
 TI Composition of polyimide resin conductive paste
 IN Ogiwara, Toshiaki
 PA Japan
 SO U.S. Pat. Appl. Publ., 4 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C08K003-08
 ICS C08K003-04
 INCL 524439000; 524495000
 CC 37-3 (Plastics Manufacture and Processing)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI US 2005187329	A1	20050825	US 2004-786489	20040225
EP 1569244	A2	20050831	EP 2005-4015	20050224
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
JP 2005243638	A2	20050908	JP 2005-50818	20050225

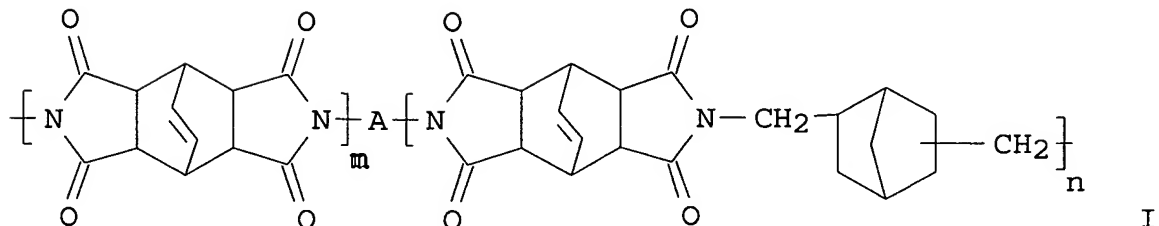
PRAI US 2004-786489 A 20040225

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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US 2005187329	ICM	C08K003-08
	ICS	C08K003-04
	INCL	524439000; 524495000

IPCI C08K0003-08 [ICM,7]; C08K0003-04 [ICS,7];
 C08K0003-00 [ICS,7,C*]
 IPCR H01B0001-22 [I,A]; H01B0001-22 [I,C*];
 H01B0001-24 [I,A]; H01B0001-24 [I,C*]
 NCL 524/439.000
 ECLA H01B001/22; H01B001/24; H05K001/09D2
 EP 1569244 IPCI H01B0001-22 [ICM,7]; H01B0001-24 [ICS,7]
 IPCR H01B0001-22 [I,A]; H01B0001-22 [I,C*];
 H01B0001-24 [I,A]; H01B0001-24 [I,C*]
 ECLA H01B001/22; H01B001/24; H05K001/09D2
 JP 2005243638 IPCI H01B0001-20 [ICM,7]; C08G0073-10 [ICS,7];
 C08G0073-00 [ICS,7,C*]; C08K0003-00 [ICS,7];
 C08L0079-08 [ICS,7]; C08L0079-00 [ICS,7,C*]
 IPCR H01B0001-22 [I,A]; H01B0001-22 [I,C*];
 H01B0001-24 [I,A]; H01B0001-24 [I,C*]
 FTERM 4J002/CM041; 4J002/DA026; 4J002/DA076;
 4J002/DA086; 4J002/DA116; 4J002/DC006;
 4J002/EE037; 4J002/EH037; 4J002/EL067;
 4J002/EU027; 4J002/FD116; 4J002/GQ02; 4J002/HA01;
 4J043/PA04; 4J043/QB15; 4J043/QB26; 4J043/RA06;
 4J043/RA35; 4J043/SA06; 4J043/SA85; 4J043/SB01;
 4J043/SB03; 4J043/TA22; 4J043/TA72; 4J043/TB01;
 4J043/TB02; 4J043/UA052; 4J043/UA081;
 4J043/UA151; 4J043/UA432; 4J043/UA761;
 4J043/UB021; 4J043/UB131; 4J043/UB351;
 4J043/VA011; 4J043/XA03; 4J043/XA14; 4J043/XA16;
 4J043/YA23; 4J043/ZA12; 4J043/ZA41; 4J043/ZA44;
 4J043/ZB49; 5G301/DA03; 5G301/DA51; 5G301/DD10

GI



AB A conductor compn. comprising an elec. conductive powder, an org. solvent sol., polyimide resin and solvent wherein the ratio of conductive powder to org. resin is from 80:20 to 99:1 and wherein polyimide resin (I) comprises chem. units selected from and mixts. of these units and wherein in unit (2) the range of the mole ratio m to n is from 90:10 to 10:90 and A represents diamine compds. which bond the structures of unit (2) into units of the resin.

ST polyimide resin conductive paste powder

IT Electrically conductive pastes
(compn. of polyimide resin conductive paste)

IT Polyimides, uses
(compn. of polyimide resin conductive paste)

IT 863098-65-1, PI 117
(compn. of polyimide resin conductive paste)

IT 7440-22-4, Silver, uses
(powder; compn. of polyimide resin conductive paste)

IT 138-22-7, Butyl lactate
(solvent; compn. of polyimide resin conductive paste)

IT 863098-65-1, PI 117
(compn. of polyimide resin conductive paste)

RN 863098-65-1 ZCAPLUS

ED Entered STN: 14 Sep 2005

CN PI 117 (9CI) (CA INDEX NAME)

ENTE An org. solvent soluble bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylic anhydride-norbornanebis(methylamine)-based polyimide resin (Maruzen Petrochemical)

MF Unspecified

CI PMS, MAN

PCT Manual registration

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

DT.CA Caplus document type: Patent

RL.P Roles from patents: USES (Uses)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L7 ANSWER 2 OF 5 ZCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:101658 ZCAPLUS

DN 140:304164

ED Entered STN: 09 Feb 2004

TI Synthesis of alicyclic polyimides and the optical properties
AU Matsumoto, Toshihiko
CS Center for Nano Science and Technology, Tokyo Polytechnic Univ.,
Kanagawa, 243-0297, Japan
SO Kobunshi Ronbunshu (2004), 61(1), 39-48
CODEN: KBRBA3; ISSN: 0386-2186
PB Kobunshi Gakkai
DT Journal
LA Japanese
CC 35-5 (Chemistry of Synthetic High Polymers)
AB It has become theor. apparent that the coloration in arom.
polyimides is attributable to the intramol. charge transfer from the
semi-empirical MO calcns. for the model compds. Several new
tetracarboxylic dianhydrides bearing an alicyclic structure were
synthesized by the Diels-Alder reaction and the Pd-catalyzed
dimethoxycarbonylation reaction. Semi-arom. or fully alicyclic
polyimide films were prepd. from the dianhydrides and arom. or
alicyclic diamines by the two-step polycondensation method. The
films were colorless, and the transparencies in the visible region
were over 85%. The films remained colorless up to 300° when
heated in air, and 400° in N₂. The semi-arom. polyimides had
an av. refractive index range of 1.599 to 1.617, and the
birefringences were lower than 0.017. The fully alicyclic polyimide
films showed a cut-off wavelength shorter than 235 nm. The av.
refractive index of the PI(BHDA-BBH) polyimide film was 1.522, and
the birefringence was nearly zero. The dielec. const. estd. from
the refractive index was 2.55.
ST alicyclic polyimide optical
IT Polyimides, preparation
(polyether-; synthesis of alicyclic polyimides and optical
properties)
IT Polysulfones, preparation
(polyether-polyimide-; synthesis of alicyclic polyimides and
optical properties)
IT Polyimides, preparation
(polyether-polysulfone-; synthesis of alicyclic polyimides and
optical properties)
IT Polyethers, preparation
(polyimide-; synthesis of alicyclic polyimides and optical
properties)
IT Polyethers, preparation
(polyimide-polysulfone-; synthesis of alicyclic polyimides and

optical properties)

IT Birefringence
Dielectric constant
Glass transition temperature
Refractive index
Transparency
(synthesis of alicyclic polyimides and optical properties)

IT Polyimides, preparation
(synthesis of alicyclic polyimides and optical properties)

IT 123248-15-7 244123-17-9 676227-24-0 676227-26-2 676227-28-4
(model compd.; synthesis of alicyclic polyimides and optical properties)

IT 117183-06-9P 117306-09-9P 175275-19-1P 175275-20-4P
244022-03-5P 361445-46-7P
(monomer; synthesis of alicyclic polyimides and optical properties)

IT 88-99-3, Phthalic acid, reactions 129-64-6 542-92-7,
Cyclopentadiene, reactions 2170-03-8 2746-19-2 39589-98-5
(synthesis of alicyclic polyimides and optical properties)

IT 5675-13-8P 58601-47-1P 68548-40-3P 81532-28-7P 108211-23-0P
118758-38-6P 143890-35-1P 143956-31-4P 243853-55-6P
244022-12-6P 676227-30-8P
(synthesis of alicyclic polyimides and optical properties)

IT 25036-53-7P 25038-81-7P, 4,4'-Diaminodiphenyl ether-pyromellitic dianhydride copolymer 175414-65-0P 175414-66-1P 175414-67-2P
186131-43-1P 202348-24-1P 202483-81-6P 244064-41-3P
259740-14-2P 327969-74-4P 328250-43-7P 361445-45-6P
361445-49-0P 361533-59-7P 361533-60-0P 361533-65-5P
361533-67-7P 361533-68-8P 676227-32-0P 676460-92-7P
676460-93-8P 676477-65-9P
(synthesis of alicyclic polyimides and optical properties)

IT **676460-93-8P 676477-65-9P**
(synthesis of alicyclic polyimides and optical properties)

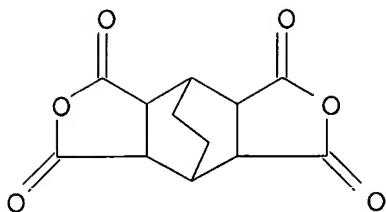
RN 676460-93-8 ZCAPLUS

CN 4,8-Ethano-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, hexahydro-, (3a α ,4 β ,4a α ,7a α ,8 β ,8a α)-, polymer with bicyclo[2.2.1]heptane-2,?-dimethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 175275-20-4

CMF C12 H10 O6

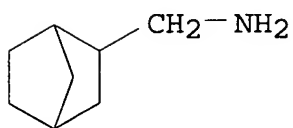


CM 2

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

D1- $\text{CH}_2\text{-NH}_2$

RN 676477-65-9 ZCAPLUS

CN Poly[[(3aR,4 α ,4aS,7aR,8 α ,8aS)-octahydro-1,3,5,7-tetraoxo-4,8-ethanobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl]methylenebicyclo[2.2.1]heptane-2,?-diylmethylenel], rel- (9CI)
(CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L7 ANSWER 3 OF 5 ZCAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:573312 ZCAPLUS

DN 135:153813

ED Entered STN: 08 Aug 2001

TI Highly photosensitive polyimides for laser processing and their

solution compositions

IN Katsumura, Yosuke; Irie, Makoto
 PA Maruzen Oil Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C08G073-10
 ICS C08K005-00; C08L079-08; C08J007-00
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 74

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001213962	A2	20010807	JP 2000-27003	20000204

PRAI JP 2000-27003 20000204

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001213962	ICM	C08G073-10
	ICS	C08K005-00; C08L079-08; C08J007-00
	IPCI	C08G0073-10 [ICM,7]; C08G0073-00 [ICM,7,C*]; C08K0005-00 [ICS,7]; C08L0079-08 [ICS,7]; C08L0079-00 [ICS,7,C*]; C08J0007-00 [ICS,7]
	IPCR	C08G0073-00 [I,C*]; C08G0073-10 [I,A]; C08J0007-00 [N,A]; C08J0007-00 [N,C*]; C08K0005-00 [I,A]; C08K0005-00 [I,C*]; C08L0079-00 [I,C*]; C08L0079-08 [I,A]
AB		The compns. contain (A) polyimides prepd. by polycondensation of (a) acid dianhydrides contg. (C1-4 alkyl-substituted) bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylic dianhydride and optionally, other tetracarboxylic dianhydrides and (b) diamines and (B) solvents. Thus, a γ -butyrolactone soln. of polyimide prepd. by polymn. of bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylic dianhydride and 2,5- or 2,6-bis(aminomethyl)bicyclo[2.2.1]heptane was applied on a glass plate and heated at 180° to give a film, which was etched by laser irradiation resulting in no deposition of black decompd. products.
ST		polyimide UV laser etching butyrolactone soln; bicyclooctene

carboxylic anhydride aminomethylbicycloheptane polyimide film

IT Laser ablation
(highly photosensitive polyimides for laser processing)

IT Polyimides, uses
(highly photosensitive polyimides for laser processing)

IT Polyimides, uses
(polyether-; highly photosensitive polyimides for laser processing)

IT Polysiloxanes, uses
(polyimide-, block; highly photosensitive polyimides for laser processing)

IT Polyethers, uses
(polyimide-; highly photosensitive polyimides for laser processing)

IT Polyimides, uses
(siloxane-, block; highly photosensitive polyimides for laser processing)

IT 210432-58-9P 210432-66-9P 210432-67-0P
352457-63-7P 352457-66-0P 352552-73-9P
(highly photosensitive polyimides for laser processing)

IT 67-68-5, Dimethyl sulfoxide, uses 68-12-2, N,N-Dimethylformamide,
uses 96-48-0, γ -Butyrolactone 108-29-2,
 γ -Valerolactone 127-19-5, N,N-Dimethylacetamide 872-50-4,
N-Methylpyrrolidone, uses
(solvent; highly photosensitive polyimides for laser processing)

IT 210432-58-9P 210432-66-9P 210432-67-0P
352457-63-7P 352457-66-0P
(highly photosensitive polyimides for laser processing)

RN 210432-58-9 ZCAPLUS

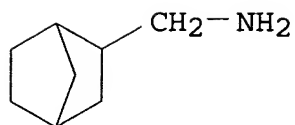
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-
dimethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

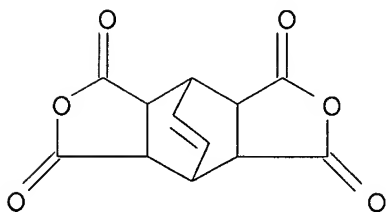


D1-CH₂-NH₂

CM 2

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-66-9 ZCAPLUS

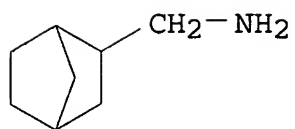
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,2-dimethanamine and 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

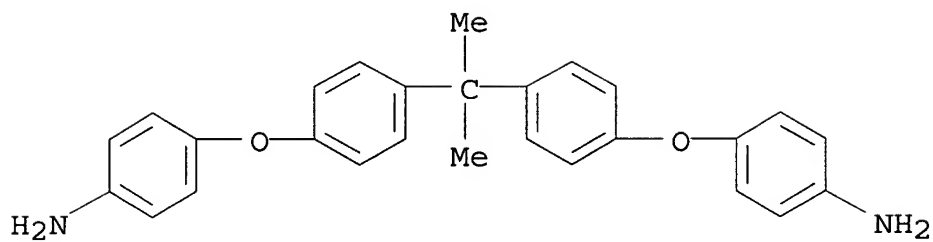


D1-CH₂-NH₂

CM 2

CRN 13080-86-9

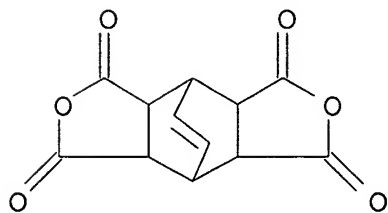
CMF C27 H26 N2 O2



CM 3

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-67-0 ZCAPLUS

CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,

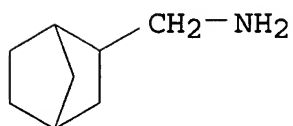
3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-dimethanamine, [5,5'-biisobenzofuran]-1,1',3,3'-tetrone and 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

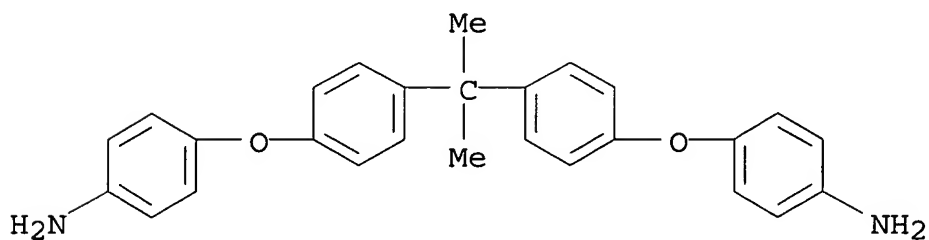


D1- CH_2NH_2

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CRN 13080-86-9

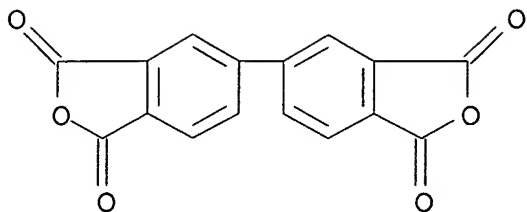
CMF C27 H26 N2 O2



CM 3

CRN 2420-87-3

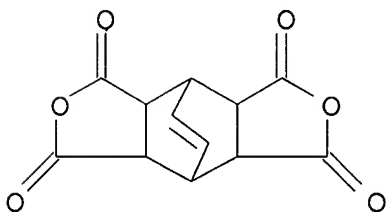
CMF C16 H6 O6



CM 4

CRN 1719-83-1

CMF C12 H8 O6



RN 352457-63-7 ZCAPLUS

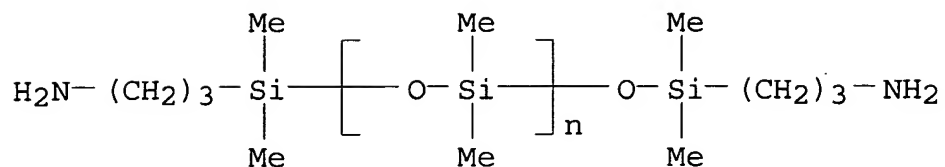
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
 3a,4,4a,7a,8,8a-hexahydro-, polymer with α -[(3-aminopropyl)dimethylsilyl]- ω -[[(3-aminopropyl)dimethylsilyl]oxy]poly[oxy(dimethylsilylene)] and bicyclo[2.2.1]heptane-2,?-dimethanamine, block (9CI) (CA INDEX NAME)

CM 1

CRN 97917-34-5

CMF (C2 H6 O Si)_n C10 H28 N2 O Si2

CCI PMS

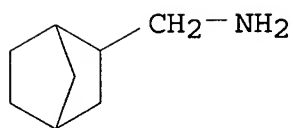


CM 2

CRN 62196-77-4

CMF C9 H18 N2

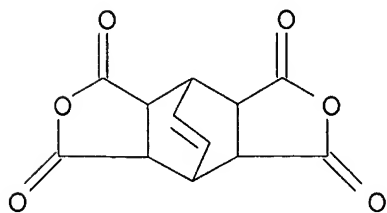
CCI IDS

D1-CH₂-NH₂

CM 3

CRN 1719-83-1

CMF C12 H8 O6



RN 352457-66-0 ZCAPLUS

CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,

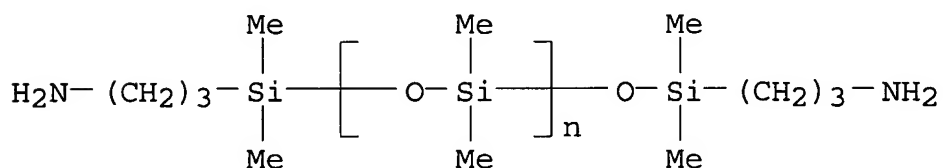
3a,4,4a,7a,8,8a-hexahydro-, polymer with α -[(3-aminopropyl)dimethylsilyl]- ω -[[(3-aminopropyl)dimethylsilyl]oxy]poly[oxy(dimethylsilylene)], 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone and bicyclo[2.2.1]heptane-2,?-dimethanamine, block (9CI) (CA INDEX NAME)

CM 1

CRN 97917-34-5

CMF (C2 H6 O Si)_n C10 H28 N2 O Si2

CCI PMS

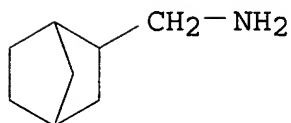


CM 2

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

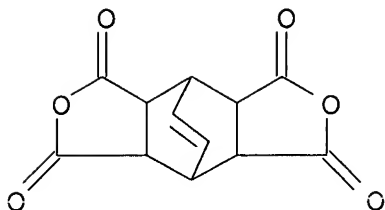


D1-CH₂-NH₂

CM 3

CRN 1719-83-1

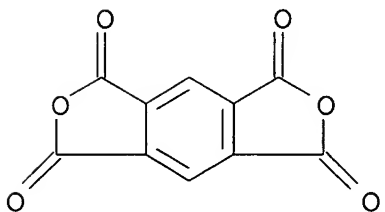
CMF C12 H8 O6



CM 4

CRN 89-32-7

CMF C10 H2 O6



L7 ANSWER 4 OF 5 ZCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:639704 ZCAPLUS
DN 131:351750
ED Entered STN: 08 Oct 1999
TI Synthesis of fully aliphatic polyimides
AU Seino, Hiroshi; Sasaki, Takeshi; Mochizuki, Amane; Ueda, Mitsuru
CS Department of Human Sensing and Functional Sensor Engineering,
Graduate School of Engineering, Yamagata University, Yamagata,
992-8510, Japan
SO High Performance Polymers (1999), 11(3), 255-262
CODEN: HPPOEX; ISSN: 0954-0083
PB Institute of Physics Publishing
DT Journal
LA English
CC 35-5 (Chemistry of Synthetic High Polymers)

AB Cycloaliph. polyimides (APIs) have been synthesized. The APIs were prepd. by poly(addn.-condensation) of the alicyclic dianhydride bicyclo[2.2.2]octane-2,3,5,6-tetracarboxylic 2,3:5,6-dianhydride with the aliph. diamine 5-amino-1,3,3-trimethylcyclohexylmethylamine, a mixt. of 2,5- and 2,6-bis(aminomethyl)bicyclo[2.2.1]heptane, or 1,4-cyclohexanebis(methylamine) in m-cresol at high temp. The polymn. proceeded smoothly at 200°C and produced APIs with inherent viscosities up to 0.48 dL g⁻¹. The APIs were sol. in a wide range of polar solvents and showed high thermal stability and excellent transparency.

ST cycloaliph polyimide prepn bicyclooctanetetracarboxylic acid

IT Polyimides, preparation

(cycloaliph.; prepn. and characterization of)

IT 72598-54-0P, Tetramethyl bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylate 250135-70-7P, Tetramethyl bicyclo[2.2.2]octane-2,3,5,6-tetracarboxylate

(monomer intermediate; prepn. of cycloaliph. polyimides)

IT 67-56-1, Methanol, reactions 1719-83-1, Bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylic 2,3:5,6-dianhydride

(monomer starting material; prepn. of cycloaliph. polyimides)

IT 2754-40-7P, Bicyclo[2.2.2]octane-2,3,5,6-tetracarboxylic 2,3:5,6-dianhydride

(monomer; prepn. of cycloaliph. polyimides)

IT 210356-85-7P 250135-73-0P 250135-75-2P

250135-77-4P 250135-79-6P

(prepn. and characterization of cycloaliph. polyimides)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Abajo, J; Handbook of Polymer Synthesis 1992, P941
- (2) Chern, Y; J Polym Sci Part A 1996, V34, P117 ZCAPLUS
- (3) Chern, Y; J Polym Sci Part A 1996, V34, P125 ZCAPLUS
- (4) Chern, Y; J Polym Sci Part A 1996, V34, P1501 ZCAPLUS
- (5) Chern, Y; Macromolecules 1997, V30, P4646 ZCAPLUS
- (6) Gosh, M; Polyimides 1996
- (7) Gosh, M; Polyimides 1996, P743
- (8) Itamura, S; Macromolecules 1993, V26, P3490 ZCAPLUS
- (9) Kusama, M; Macromolecules 1994, V27, P1117 ZCAPLUS
- (10) Li, Q; Polym J 1998, V30, P805 ZCAPLUS
- (11) Matsumoto, T; React Funct Polym 1996, V30, P55 ZCAPLUS
- (12) Matsuura, T; Macromolecules 1992, V25, P3540 ZCAPLUS
- (13) Merecer, F; High Perform Polym 1993, V5, P97
- (14) Sato, M; Handbook of Thermoplastics 1997, P665 ZCAPLUS

(15) Seino, H; High Perform Polym 1997, V9, P333 ZCAPLUS

(16) Tabushi, I; Kogyo Kagaku Zasshi 1964, V67, P1084 ZCAPLUS

(17) Volksen, W; React Funct Polym 1996, V30, P61 ZCAPLUS

IT 210356-85-7P 250135-75-2P

(prepn. and characterization of cycloaliph. polyimides)

RN 210356-85-7 ZCAPLUS

CN Poly[(octahydro-1,3,5,7-tetraoxo-4,8-ethanobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl)methylenebicyclo[2.2.1]heptanediylmethy-
lene] (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

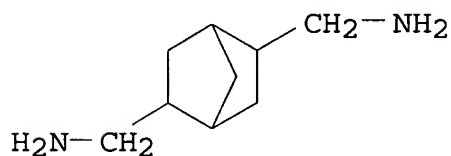
RN 250135-75-2 ZCAPLUS

CN 4,8-Ethano-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
hexahydro-, polymer with bicyclo[2.2.1]heptane-2,5-dimethanamine and
bicyclo[2.2.1]heptane-2,6-dimethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 2916-26-9

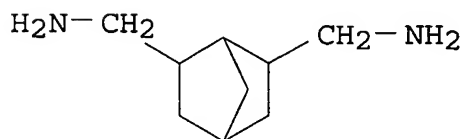
CMF C9 H18 N2



CM 2

CRN 2916-25-8

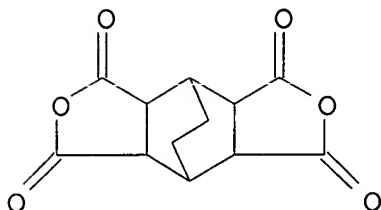
CMF C9 H18 N2



CM 3

CRN 2754-40-7

CMF C12 H10 O6



L7 ANSWER 5 OF 5 ZCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:485109 ZCAPLUS
DN 129:149391
ED Entered STN: 04 Aug 1998
TI Soluble polyimides, manufacture thereof, and polyimide solution
compositions, having high transparency and moldability, useful in
electronics
IN Matsumoto, Toshihiko; Kurosaki, Toshikazu; Irie, Shin; Kudo,
Masaaki; Ito, Yoshiharu; Kaneko, Masao
PA Maruzen Petrochemical Co., Ltd., Japan
SO PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C08G073-10
ICS C08L079-08; C09D179-08
CC 35-5 (Chemistry of Synthetic High Polymers)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 9829471	A1	19980709	WO 1997-JP4820	199712 25

W: CA, CN, JP, KR, US

RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SE

CA 2247287	AA	19980709	CA 1997-2247287	199712 25
CA 2247287	C	20040713		
EP 896014	A1	19990210	EP 1997-950393	199712 25
EP 896014	B1	20041117		
R: CH, DE, FR, GB, IT, LI				
US 6100365	A	20000808	US 1999-125852	199904 12
PRAI JP 1996-358731	A	19961227		
JP 1997-246122	A	19970827		
WO 1997-JP4820	W	19971225		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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WO 9829471	ICM	C08G073-10
	ICS	C08L079-08; C09D179-08
	IPCI	C08G0073-10 [ICM,6]; C08G0073-00 [ICM,6,C*]; C08L0079-08 [ICS,6]; C08L0079-00 [ICS,6,C*]; C09D0179-08 [ICS,6]; C09D0179-00 [ICS,6,C*]
	IPCR	C08G0073-00 [I,C*]; C08G0073-10 [I,A]; C08L0079-00 [I,C*]; C08L0079-08 [I,A]; C09D0179-00 [I,C*]; C09D0179-08 [I,A]
	ECLA	C08G073/10; C08L079/08; C09D179/08
CA 2247287	IPCI	C08G0073-10 [ICM,6]; C08G0073-00 [ICM,6,C*]; C09D0179-08 [ICS,6]; C09D0179-00 [ICS,6,C*]; C08L0079-08 [ICS,6]; C08L0079-00 [ICS,6,C*]
EP 896014	IPCI	C08G0073-10 [ICM,6]; C08G0073-00 [ICM,6,C*]; C08L0079-08 [ICS,6]; C08L0079-00 [ICS,6,C*]; C09D0179-08 [ICS,6]; C09D0179-00 [ICS,6,C*]
	IPCR	C08G0073-00 [I,C*]; C08G0073-10 [I,A]; C08L0079-00 [I,C*]; C08L0079-08 [I,A]; C09D0179-00 [I,C*]; C09D0179-08 [I,A]
	ECLA	C08G073/10; C08L079/08; C09D179/08
US 6100365	IPCI	C08G0073-10 [ICM,7]; C08G0073-00 [ICM,7,C*]; C08G0069-28 [ICS,7]; C08G0069-00 [ICS,7,C*]; C08L0079-08 [ICS,7]; C08L0079-00 [ICS,7,C*]
	IPCR	C08G0073-00 [I,C*]; C08G0073-10 [I,A]; C08L0079-00 [I,C*]; C08L0079-08 [I,A];

C09D0179-00 [I,C*]; C09D0179-08 [I,A]
 NCL 528/170.000; 220/220.000; 220/229.000;
 220/350.000; 220/746.000; 220/792.000;
 524/600.000; 524/606.000; 528/026.000;
 528/028.000; 528/038.000; 528/125.000;
 528/128.000; 528/171.000; 528/172.000;
 528/173.000; 528/174.000; 528/183.000;
 528/185.000; 528/188.000

ECLA C08G073/10; C08L079/08; C09D179/08

- AB The title polyimides comprise diamine units contg. 2,5 (or 6)-bis(aminomethyl)bicyclo[2.2.1]heptane and have a transmittance $\geq 60\%$ (400 nm) for 10 μm -thick films. A copolymer from bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylic dianhydride and 2,5(or 6)-bis(aminomethyl)bicyclo[2.2.1]heptane was sol. in chloroform, DMSO, DMF, AcNMe₂, NMP, γ -butyrolactone, γ -valerolactone, cyclohexanone, lactic acid Et ester, m-cresol, and pyridine and had Tg 294°, 5%-wt.-loss temp. 422°, logarithmic viscosity (0.5 d/dL, in NMP) 0.19, and film transparency 71.8%.
- ST transparent polyimide soluble
- IT Polysiloxanes, preparation
 Polysiloxanes, preparation
 Polysiloxanes, preparation
 (polyether-polyimide-; sol. polyimides, manuf. thereof, and polyimide soln. compns., having high transparency and moldability, useful in electronics)
- IT Polyimides, preparation
 Polyimides, preparation
 Polyimides, preparation
 (polyether-siloxane-; sol. polyimides, manuf. thereof, and polyimide soln. compns., having high transparency and moldability, useful in electronics)
- IT Polysiloxanes, preparation
 Polysiloxanes, preparation
 Polysulfones, preparation
 Polysulfones, preparation
 (polyimide-; sol. polyimides, manuf. thereof, and polyimide soln. compns., having high transparency and moldability, useful in electronics)
- IT Polyethers, preparation
 Polyethers, preparation
 Polyethers, preparation

(polyimide-siloxane-; sol. polyimides, manuf. thereof, and polyimide soln. compns., having high transparency and moldability, useful in electronics)

IT Polyimides, preparation

Polyimides, preparation

(polysiloxane-; sol. polyimides, manuf. thereof, and polyimide soln. compns., having high transparency and moldability, useful in electronics)

IT Polyimides, preparation

Polyimides, preparation

(polysulfone-; sol. polyimides, manuf. thereof, and polyimide soln. compns., having high transparency and moldability, useful in electronics)

IT Electric apparatus

Heat-resistant materials

Transparent materials

(sol. polyimides, manuf. thereof, and polyimide soln. compns., having high transparency and moldability, useful in electronics)

IT 89-32-7DP, polyimide-polysiloxane derivs. 1719-83-1DP,

polysiloxane-polyimide block copolymers 2657-87-6DP,

polyether-polyimide-polysiloxanes 62196-77-4DP,

Bicyclo[2.2.1]heptane-2,?-dimethanamine, polysiloxane-polyimide

block copolymers 210356-83-5P 210356-84-6P 210356-85-7P

210356-86-8P 210432-58-9P, Bicyclo[2.2.2]oct-7-ene-

2,3,5,6-tetracarboxylic dianhydride-2,5(or 6)-

bis(aminomethyl)bicyclo[2.2.1]heptane copolymer 210432-59-0P

210432-60-3P 210432-61-4P 210432-62-5P

210432-63-6P 210432-64-7P 210432-65-8P

210432-66-9DP, siloxane-modified 210432-66-9P

210432-67-0P 210432-68-1P

(sol. polyimides, manuf. thereof, and polyimide soln. compns.,

having high transparency and moldability, useful in electronics)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Japan Synthetic Rubber Co Ltd; JP 01249122 A 1989 ZCAPLUS

IT 210356-85-7P 210356-86-8P 210432-58-9P,

Bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylic dianhydride-2,5(or 6)-bis(aminomethyl)bicyclo[2.2.1]heptane copolymer

210432-61-4P 210432-63-6P 210432-64-7P

210432-65-8P 210432-66-9DP, siloxane-modified

210432-66-9P 210432-67-0P 210432-68-1P

(sol. polyimides, manuf. thereof, and polyimide soln. compns.,

having high transparency and moldability, useful in electronics)

RN 210356-85-7 ZCAPLUS

CN Poly[(octahydro-1,3,5,7-tetraoxo-4,8-ethanobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl)methylenebicyclo[2.2.1]heptanediylmethylene] (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 210356-86-8 ZCAPLUS

CN Poly[(3a,4,4a,5,7,7a,8,8a-octahydro-1,3,5,7-tetraoxo-4,8-ethenobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl)methylenebicyclo[2.2.1]heptanediylmethylene] (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 210432-58-9 ZCAPLUS

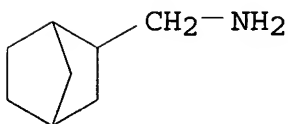
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-dimethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

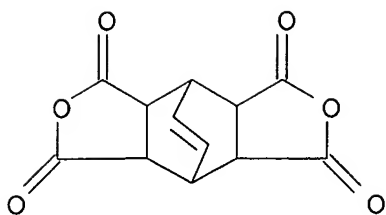


D1-CH₂-NH₂

CM 2

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-61-4 ZCAPLUS

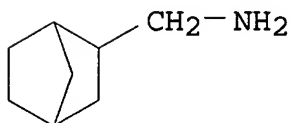
CN 4,8-Ethano-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tétrone,
hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-dimethanamine
(9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

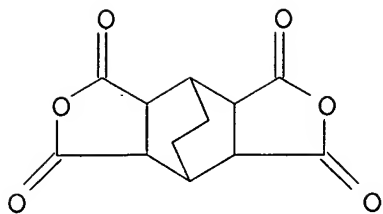


D1-CH₂-NH₂

CM 2

CRN 2754-40-7

CMF C12 H10 O6



RN 210432-63-6 ZCAPLUS

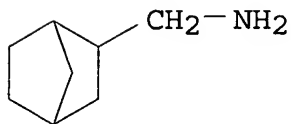
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
3a,4,4a,7a,8,8a-hexahydro-, polymer with 3-(4-aminophenoxy)benzenamine and bicyclo[2.2.1]heptane-2,?-dimethanamine
(9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

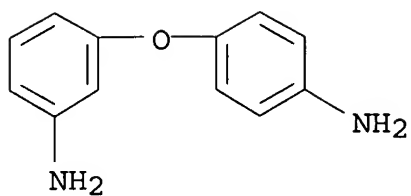


D1-CH₂-NH₂

CM 2

CRN 2657-87-6

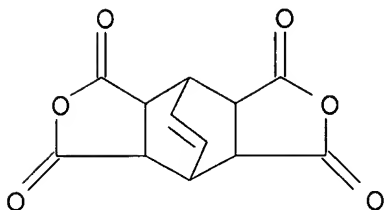
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CM 3

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-64-7 ZCAPLUS

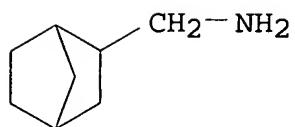
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-
dimethanamine and 3,3'-[sulfonylbis(4,1-
phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

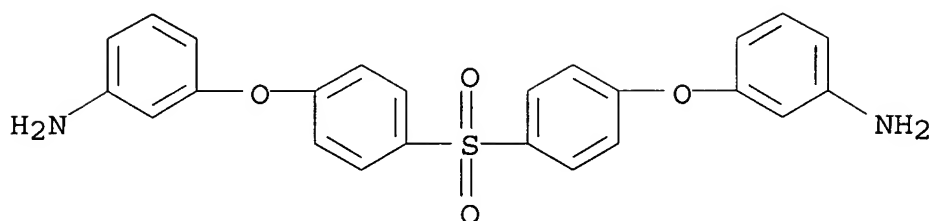


D1-CH₂-NH₂

CM 2

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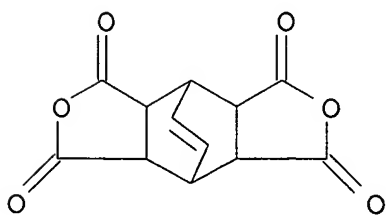
CMF C24 H20 N2 O4 S



CM 3

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-65-8 ZCAPLUS

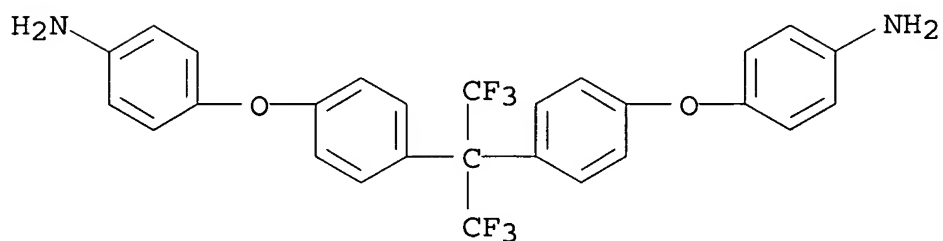
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,

3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-
dimethanamine and 4,4'-[[2,2,2-trifluoro-1-
(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[benzenamine]
(9CI) (CA INDEX NAME)

CM 1

CRN 69563-88-8

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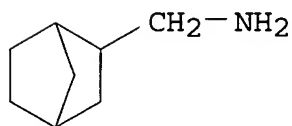


CM 2

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

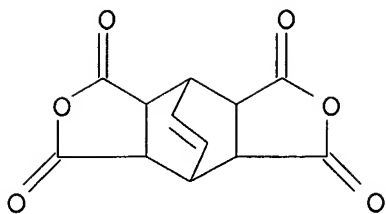


D1-CH₂-NH₂

CM 3

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-66-9 ZCAPLUS

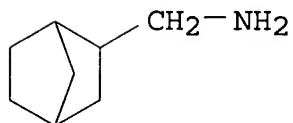
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-
dimethanamine and 4,4'-[(1-methylethylidene)bis(4,1-
phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

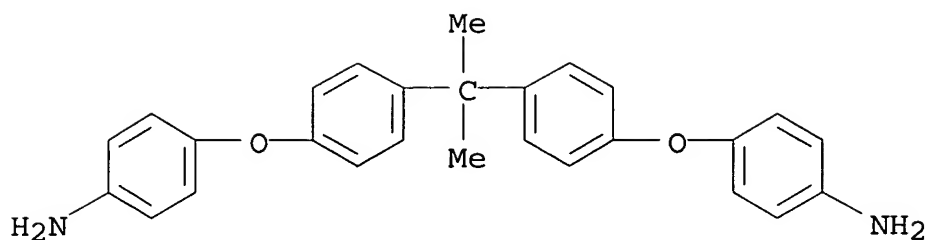


D1-CH₂-NH₂

CM 2

CRN 13080-86-9

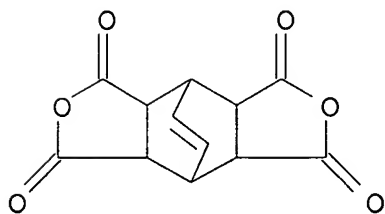
CMF C27 H26 N2 O2



CM 3

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-66-9 ZCAPLUS

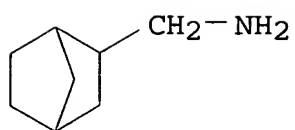
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-
dimethanamine and 4,4'-[(1-methylethylidene)bis(4,1-
phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

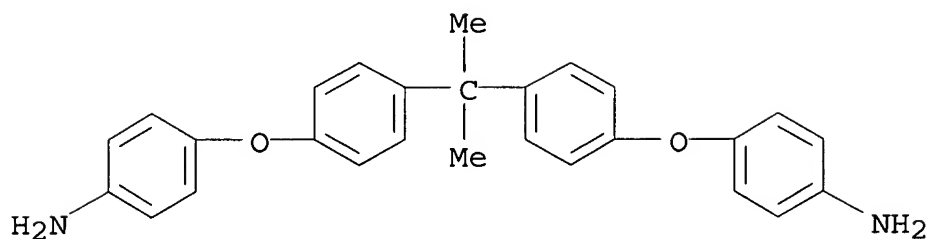


D1-CH₂-NH₂

CM 2

CRN 13080-86-9

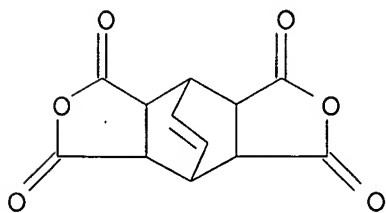
CMF C27 H26 N2 O2



CM 3

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-67-0 ZCAPLUS

CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,

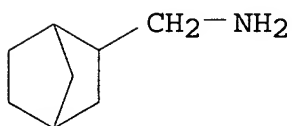
3a,4,4a,7a,8,8a-hexahydro-, polymer with bicyclo[2.2.1]heptane-2,?-dimethanamine, [5,5'-biisobenzofuran]-1,1',3,3'-tetrone and 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

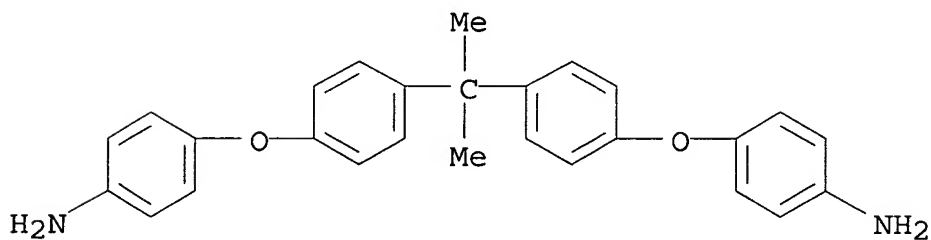


D1- CH_2NH_2

CM 2

CRN 13080-86-9

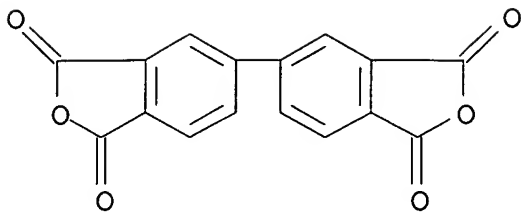
CMF C27 H26 N2 O2



CM 3

CRN 2420-87-3

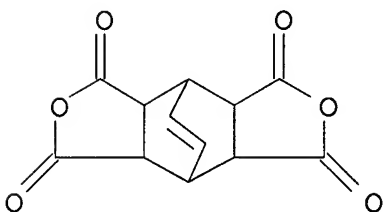
CMF C16 H6 O6



CM 4

CRN 1719-83-1

CMF C12 H8 O6



RN 210432-68-1 ZCAPLUS

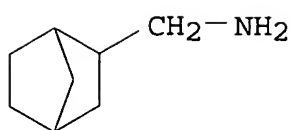
CN 4,8-Etheno-1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,
3a,4,4a,7a,8,8a-hexahydro-, polymer with 3-(4-aminophenoxy)benzenamine, bicyclo[2.2.1]heptane-2,?-dimethanamine
and [5,5'-biisobenzofuran]-1,1',3,3'-tetrone (9CI) (CA INDEX NAME)

CM 1

CRN 62196-77-4

CMF C9 H18 N2

CCI IDS

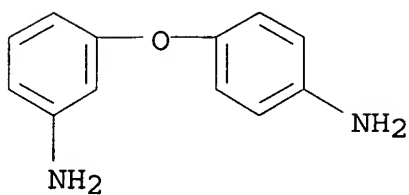


D1- CH_2NH_2

CM 2

CRN 2657-87-6

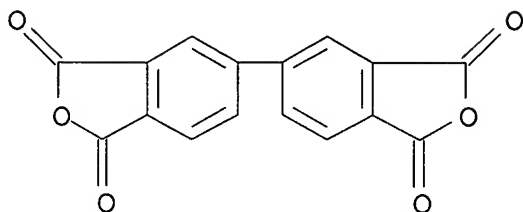
CMF C12 H12 N2 O



CM 3

CRN 2420-87-3

CMF C16 H6 O6



CM 4

CRN 1719-83-1

CMF C12 H8 O6

